

1 What is claimed is:

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1 1. A disk drive control system comprising:

2 a micro-controller;

3 a micro-controller cache system adapted to store micro-controller data for

4 access by the micro-controller;

5 a buffer manager adapted to provide the micro-controller cache system

6 with micro-controller requested data stored in a remote memory; and

7 a cache demand circuit adapted to:

8 a) receive a memory address and a memory access signal, and

9 b) cause the micro-controller cache system to fetch data from the

10 remote memory via the buffer manager based on the received

11 memory address and memory access signal prior to a micro-

12 controller request.

1 2. The disk drive control system of claim 1, wherein the memory address and

2 a memory access signal are received from the micro-controller and wherein the memory

3 address is an address of data residing in the remote memory.

1 3. The disk drive control system of claim 1, wherein the memory access

2 signal is a write signal received from the micro-controller.

1 4. The disk drive control system of claim 1, wherein the memory access signal

2 is a priority interrupt signal.

1 5. The disk drive control system of claim 4, wherein the memory address is a

2 predetermined memory address received prior to the memory access signal.

1 6. The disk drive control system of claim 5, wherein the cache demand

2 circuit is further adapted to store the predetermined memory address of data residing in

3 the remote memory.

1 7. The disk drive control system of claim 6, wherein the received interrupt

2 signal causes the cache demand circuit to provide the predetermined memory address to

3 the micro-controller cache system for fetching of data from the remote memory via the

4 buffer manager.

- 1 8. The disk drive control system of claim 7, wherein the fetched data are
2 accessed from the micro-controller cache system by the micro-controller during a micro-
3 controller interrupt service routine.
- 1 9. The disk drive control system of claim 5, wherein the cache demand
2 circuit is adapted to store the predetermined memory address of the data in a cache
3 demand circuit register.
- 1 10. The disk drive control system of claim 1, wherein the micro-controller
2 cache system comprises a cache memory having a plurality of cache segments wherein
3 the fetched data is stored in a cache segment of the memory.
- 1 11. The disk drive control system of claim 1, wherein the micro-controller
2 cache system is adapted to receive the memory address and the memory access signal
3 from the cache demand circuit.
- 1 12. The disk drive control system of claim 1, wherein the buffer manager is in
2 communication with a plurality of control system clients and provides client-requested
3 data to the clients from the remote memory.
- 1 13. The disk drive control system of claim 12, wherein the plurality of control
2 system clients comprises at least one of a disk subsystem, an error correction code
3 subsystem, and a host interface subsystem.
- 1 14. The disk drive control system of claim 1, wherein the remote memory
2 comprises a dynamic random access memory (DRAM).
- 1 15. The disk drive control system of claim 4, wherein the memory access signal
2 is a servo-interrupt signal.
- 1 16. The disk drive control system of claim 4, wherein the memory access signal
2 is a host-interrupt signal.

- 1 17. A disk drive control system comprising:
2 a micro-controller;
3 a micro-controller cache system adapted to store micro-controller data for
4 access by the micro-controller;
5 a buffer manager adapted to provide the micro-controller cache system
6 with micro-controller requested data stored in a remote memory; and
7 a cache demand circuit adapted to:
8 a) receive a memory address and a memory access signal from the
9 micro-controller, and
10 b) cause the micro-controller cache system to fetch data from the
11 remote memory via the buffer manager based on the received
12 memory address and memory access signal prior to a micro-
13 controller request.

1 18. A disk drive control system comprising:
2 a micro-controller;
3 a micro-controller cache system adapted to store micro-controller data for
4 access by the micro-controller;
5 a buffer manager adapted to provide the micro-controller cache system
6 with micro-controller requested data stored in a remote memory;
7 an interrupt circuit adapted to interrupt the micro-controller based on a
8 transmitted interrupt signal; and
9 a cache demand circuit adapted to:
10 a) receive a predetermined memory address from the micro-controller and
11 the transmitted interrupt signal from the interrupt circuit, and
12 b) because the micro-controller cache system to fetch data from the
13 remote memory via the buffer manager prior to a micro-controller request.

1 19. The disk drive control system of claim 18, wherein the received
2 transmitted interrupt signal causes the cache demand circuit to provide the predetermined
3 memory address of data in the remote memory to the micro-controller cache system,
4 wherein the micro-controller cache system fetches the data from the remote memory via
5 the buffer manager.

1 20. The disk drive control system of claim 19, wherein the predetermined memory
2 address is received in the cache demand circuit prior to the transmitted interrupt signal.